Tuner . Video Capture

CaptureTV

USER'S GUIDE

Tekram

Rev. 1.1 07/98

■ ■ ■ FCC NOTICE

This equipment has been tested and found to comply with limits for a Class B digital device, pursuant to Part 15 of the FCC rules. These limits are designed to provide reasonable protection against harmful interference in residential installations. This equipment generates, uses, and can radiate radio frequency energy, and if not installed and used in accordance with the instructions, may cause harmful interface to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause interference to radio or television equipment reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:
Reorient or relocate the receiving antenna
Move the equipment away from the receiver
Plug the equipment into an outlet on a circuit different from that to which the receiver is connected
Consult the dealer or an experienced radio/television technician for additional suggestions
Only equipment certified to comply with Class B should be attached to this equipment, and must have shielded interface cables.
The FCC requires the user to be notified that any change or modifications to the equipment by the user not expressly approved by the grantee or manufacturer could void the user's authority to operate such equipment.
Each M205 is equipped with an FCC compliance label which shows only the FCC Identification number: FCC ID: KHAM205.
This device complies with Part 15 of the FCC rule. Operation is subjected to the following two conditions:

1. This device may not cause harmful interference and
2. This device must accept any interference received, including interference that may cause undesired operation.

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1 INTRODUCTION

Congratulations on your purchase of the *CaptureTV* M205, the video capture and TV tuner card! The M205 is actually two cards in one:

- A built-in TV tuner brings television to your computer screen, allowing you to work and watch TV at the same time.
- The Video and Still Image Capture function gives you the ability to capture video from various sources, such as your VCR or camcorder, and compose your own movies or still photos.

Key Features

Television on your PC!

The *CaptureTV* M205 virtually turns your computer into a television set, complete with an infra-red Remote Control! You can watch TV in a window while working in other applications, or switch to full screen mode (up to 1024×768×16bit color) for leisure viewing. Catch your favorite programs without leaving your computer! Keep up with the news or stock prices throughout the day! The M205's remote control allows you to switch between PC and TV mode, adjust the channel, volume and more.

Live Video Display

Plug in your camcorder, VCR or laser disk player! The M205 allows you to monitor multiple video sources on your computer full screen (640×480) or in a window. The following video sources are supported and software selectable:

- The Internal TV Tuner (full screen up to 1024×768×16bit color)
- Composite video: NTSC, and PAL
- S-video: NTSC, and PAL

Image Capture

The M205 allows still image capture as well as full-motion capture. Capture images from any supported video source to use in pictures, presentations, movies and more! Make your own home movies and capture your favorite scenes!

The *VideoCapture* Utility

Lets you watch up to 125 cable television channels and 70 antenna channels in smooth, full-motion video in a window or full screen. You can capture still frames and movie clips, channel surf, or create your own TV transcripts. Composite Video and S-Video inputs support VCRs, video cameras, laser-disc players, video game consoles, etc. Still image and live video capturing is easy with a simple mouse click.

Closed captioning (NTSC only)

Support including transcript creation and Hot Words that alert you when M205 application program is broadcasting information that you want to watch.

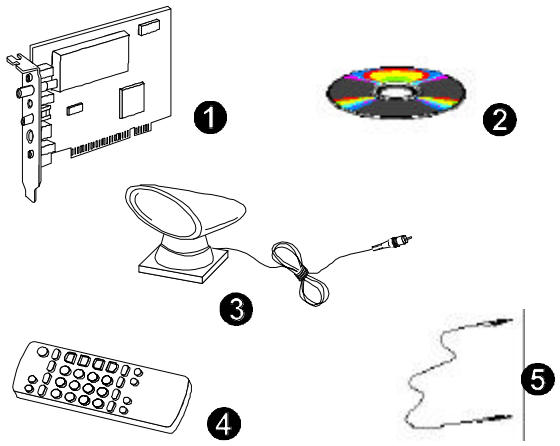
■ Minimum System Requirements

- 32-bit PCI Local Bus system (with PnP)
- CPU 486DX 33Mhz or higher, Pentium CPU recommended
- 8MB System RAM or more, 16MB memory and 1GB hard disk recommended for motion video capture
- Windows 95/98
- VGA display in 32K, 64K or 16.7M color mode with hardware assisted video playback acceleration and **DirectDraw** support
- **DirectX 5.0** installed (included in the *Tekram Multimedia Drivers & Utilities* CD) Please refer to page 31 for installation procedure.
- Sound card and speakers required for audio support

2 HARDWARE INSTALLATION

■ Components in the Package

The following components should be included in your *CaptureTV* M205 box:



1. *CaptureTV* M205 board
2. "Tekram Multimedia Drivers & Utilities" CD-ROM
3. IR Sensor
4. Remote Control
5. Audio Cable (for Sound card)

Make sure all of the above components are accounted for before you begin the installation.

■ Hardware Installation

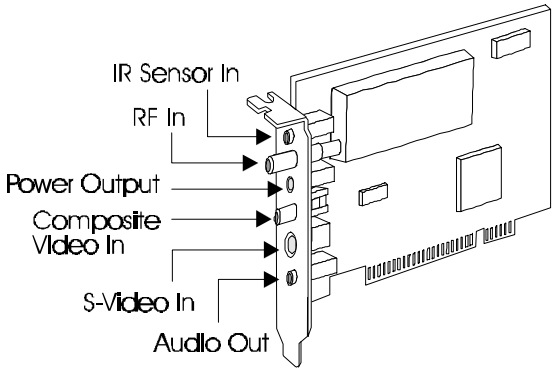
Installing the Capture Card

***Important**: Handle circuit boards by the edges or bracket. Touch the bare metal of your computer case before handling any circuit boards to prevent static discharge damage.*

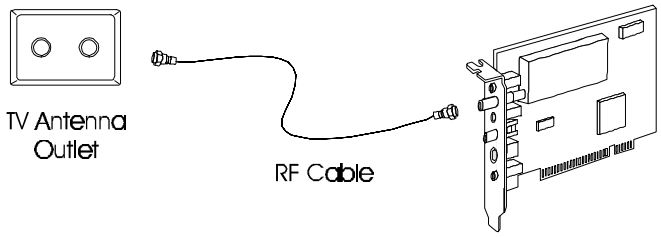
1. Turn OFF all power to your system, including any peripherals (printer, external drives, modem, etc.).
2. Disconnect the power cord and the monitor cable from the back of the computer.
3. Remove the computer cover. Refer to your system user's manual for instructions.
4. Align the gold-fingered edge on your card with an empty PCI expansion slot and gently insert it into place. You may need to remove the cover from the rear of the PCI expansion slot that you selected.
5. Replace the screws to secure the card retaining bracket in place.
6. Replace the computer cover.

External Connectors on the M205 Card

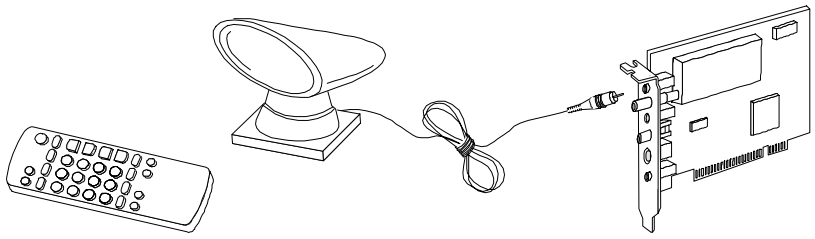
Refer to the diagram below while making the connections that follow.



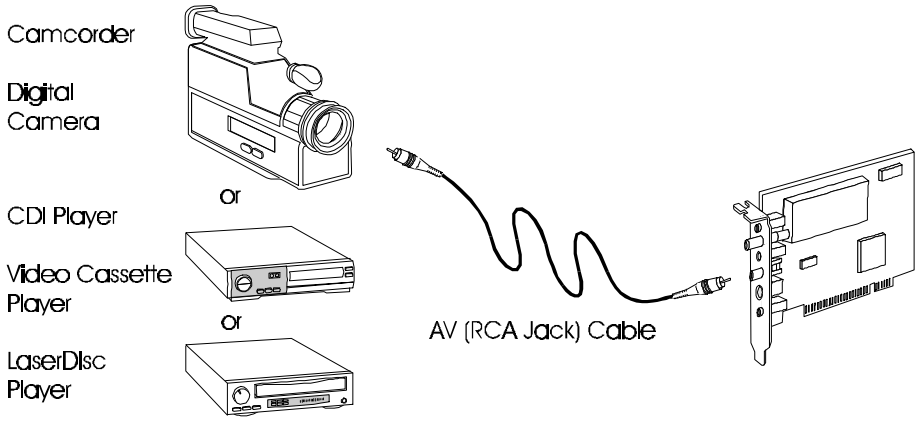
Connecting to Cable TV or Antenna



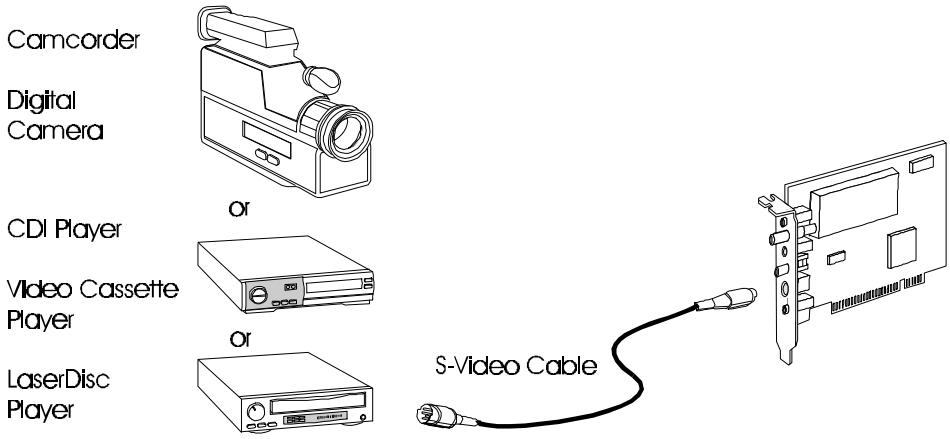
Connecting the IR Sensor



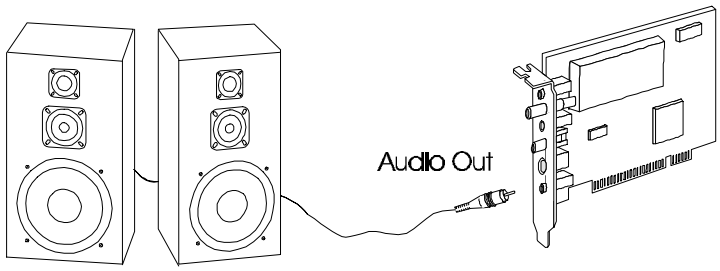
Connecting to External Video Sources (RCA jack)



Connecting to External Video Sources (S-video)



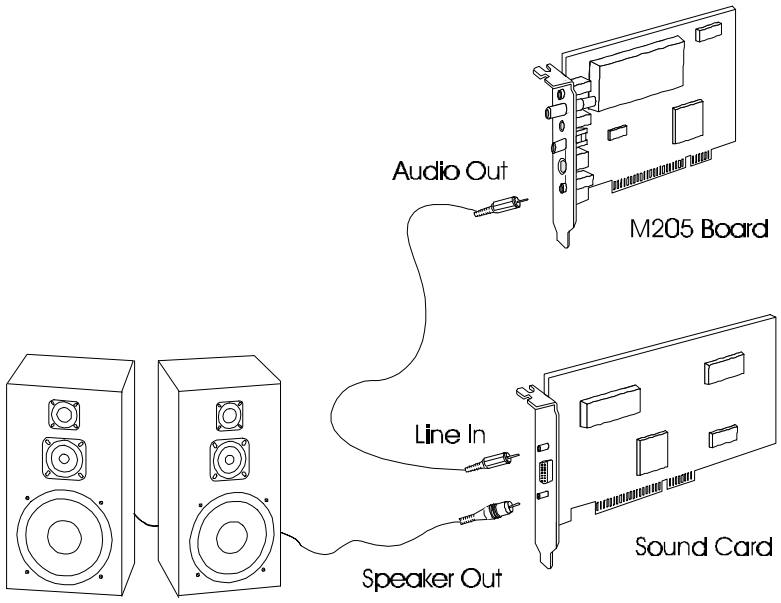
Connecting to Speakers or Headphones



NOTE: The *CaptureTV* M205 audio output jack is a low-gain output suitable for headphones and *powered* speakers, as well as an input into stereo systems or other types of amplifiers. It is not suitable for driving unpowered external speakers alone.

If your system already has a sound card, hook the *CaptureTV* M205 card's audio output to your sound card's audio input, usually marked "LINE-IN" (sometimes called "AUX-IN" or "CD-IN") with a 1/8" stereo cord, as shown below.

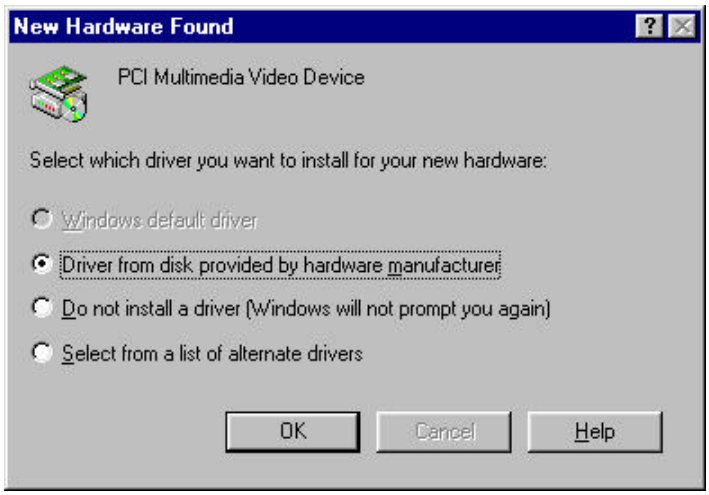
Connecting to a Sound Card



3 SOFTWARE INSTALLATION

■ Installing the Windows 95 Device Drivers

After the capture card is properly installed in the system, power on your system. Windows 95 will automatically detect the card as a Multimedia Device upon boot-up, and display a "New Hardware Found" screen like the one shown below. Click on "Driver Disk from Manufacturer", insert the *Tekram Multimedia Drivers & Utilities* CD into your floppy drive, specify the path `D:\M205` (D: is your CD-ROM drive) and follow the on-screen instructions to install the drivers for the capture card.

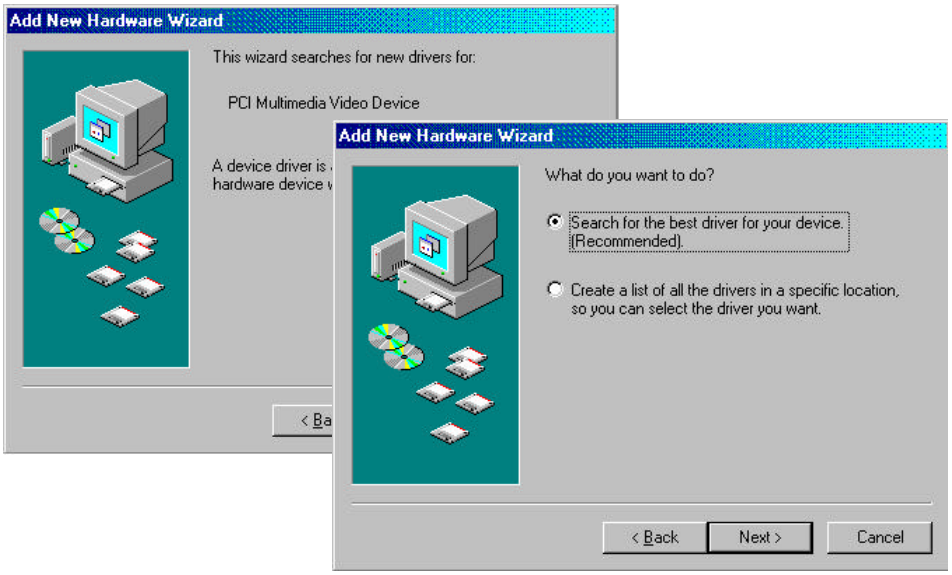


After the required files are copied, the system will ask if you wish to restart your computer. Select YES to restart.

Note: The Windows 95 setup screen on your system may look different than the one shown above if you have OSR2 / Windows 95 (B) installed.

■ Installing the Windows 98 Device Drivers

1. After the capture card is properly installed in the system, power on your system. Windows 98 will automatically detect the card as a PCI Multimedia Video Device upon boot-up, and display a “New Hardware Found” screen, then “Add New Hardware Wizard” dialog box will appear like the one shown below.
2. Then select “Search for the best drive for your device. (Recommended).”

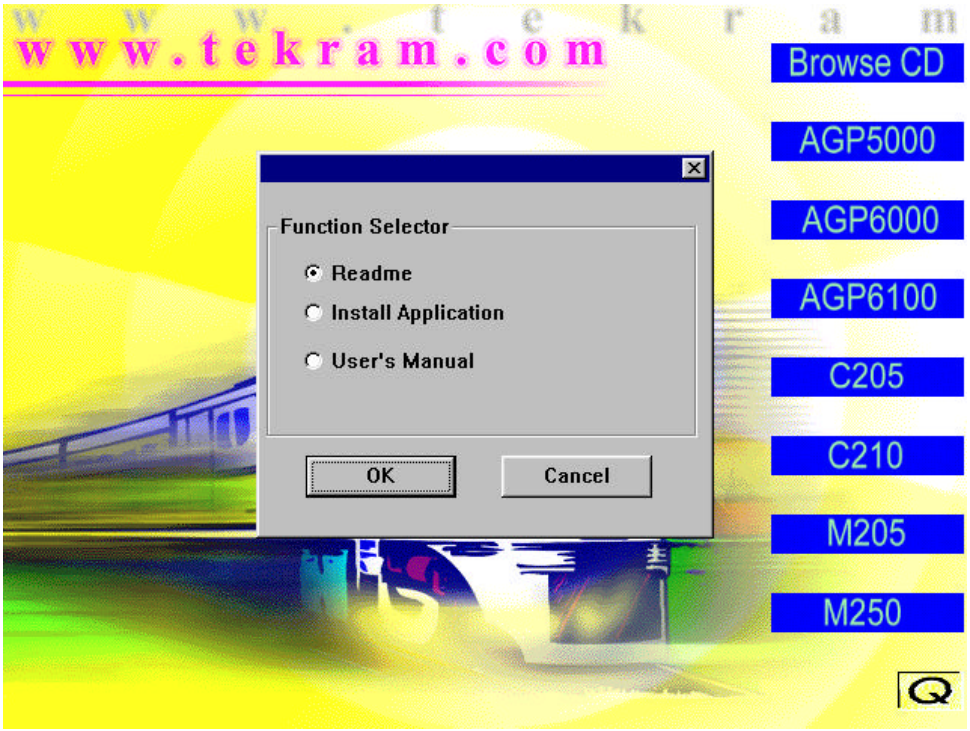


3. Next select “Specify a location” then type in `D:\M205`
4. Follow the on-screen instructions to complete the driver installation.

■ The Autorun Screen

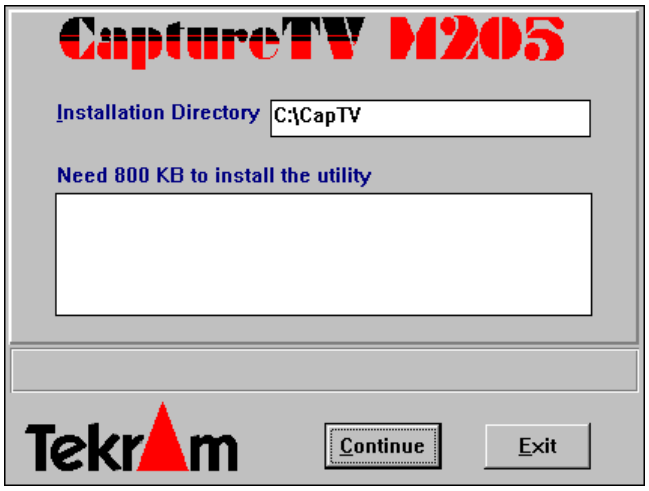
After rebooting, insert the “Tekram Multimedia Utilities & Drivers” CD-ROM into the CD-ROM drive. The *Autorun* screen will show up. If it does not appear, run `D:\AUTORUN` (where D: is your CD-ROM drive).

Double-clicking the appropriate product model name M205 brings up the “Function Selector” submenu.



■ Installing the *VideoCapture* utility

1. Select **Install Application** on the Autorun Screen. The following dialog box appears:



2. In the Installation Directory, type the drive and directory where you want the software installed. The default path is `C:\CapTV`.
3. Click Continue to start copying of the files.
4. Click on the Exit button after the installation is complete. The "CapTV" program group is added to your Windows desktop, containing the application icons as shown:

Use the Uninstall program when you want to remove this application program.

4 *VideoCapture* UTILITY

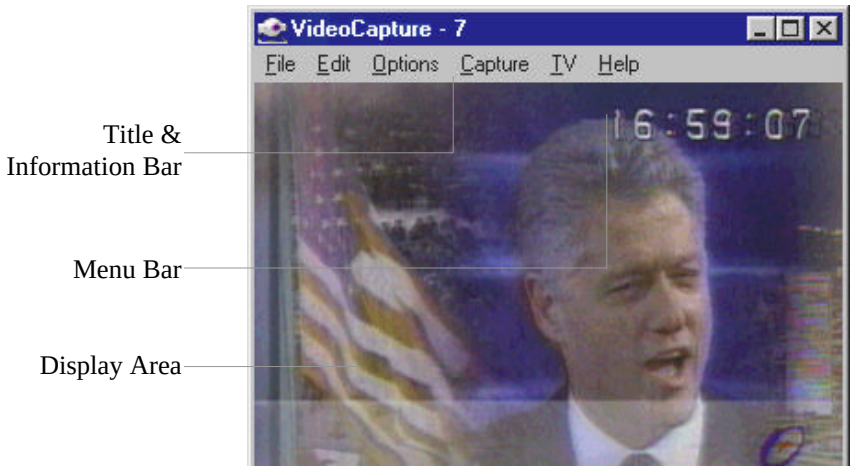
The *VideoCapture* Utility lets you watch television and playing video in a window or full screen. This application is also used for capturing still images and full-motion video from TV or a video device.

The VideoCapture utility saves the captured still image as DIB file format. The video is saved as AVI file format.

Note : *This application program cannot run under 256 or lower color mode.*

Double-click the CAPTV icon from the "CapTV" program group to start the program. The application window and the control panel will appear:

■ Application Window

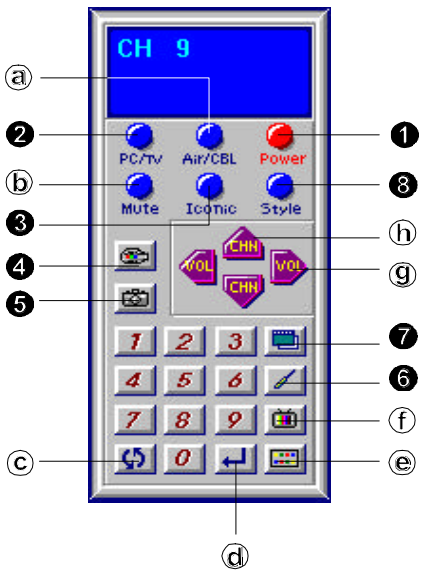


- **Title and Information Bar**: Contains the program name, the standard Windows Minimize, Maximize and Exit buttons. Also displays information about actions taking place in the window.
- **Menu Bar**: Lists the six menus of the program.
- **Display Area**: The "screen" where your media plays.

To exit from the program, either click the Exit button on the Title Bar or choose Exit from the File menu.

■ Control Panel

To show/hide the control panel, check *Show Panel* from the *TV* menu.



1. **POWER**: Quits the M205 *VideoCapture* application.
2. **PC/TV**: Switches between viewing in a window and full screen. (*)
3. **ICONIC**: minimize the program to an icon.
4. **CAPTURE MOTION**: Captures motion video.
5. **CAPTURE STILL**: Captures still image. (*)
6. **SETUP**: Brings up the setup options dialog box.
7. **ONTOP**: Enable/disable the video display window always on the top layer.
8. **STYLE**: Show/hide the caption board and menu bar of the display window.

The following buttons are for TV tuner use only. They are not active when using other video source.

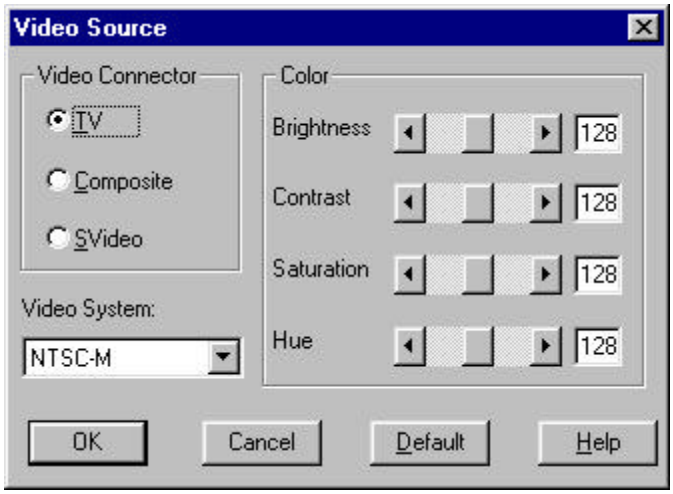
a. **AIR/CABLE**: Switches between cable TV and antenna (Air) input.
b. **MUTE**: Turn off/resume the TV audio.
c. **RECALL**: Changes to the previously selected channel.
d. **ENTER**: After pressing the numeric keys, press ENTER to complete the channel selection.
e. **BROWSE**: Displays all available channels. (*)
f. **SCAN**: Scans all active channels.
g. **VOLUME**: Volume up (right arrow button) and down (left arrow button).
h. **CHANNEL**: Channel up (up arrow button) down (down arrow button).

∗ *Press the **Esc** key on your keyboard to return to viewing in a window, resume playing the video, or stop browsing the TV channels. Please refer to the subsequent sections for details.*

■ Video Display

Selecting the Video Source and Adjusting the Picture Properties

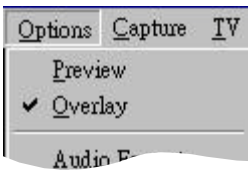
From the *Options* menu, choose *Video Source*. The Video Source dialog box appears:



- **Video Connector**: Select video input source (TV, Composite or S-video).
- **Video Standard**: Select video system type for the current input source. For proper operation, you must make sure that the Video System is correctly set for any given Video Source. For instance, your CCD camera may be a PAL device, whereas a camcorder or VCR may be a NTSC device.
  - ∗ Changing the video system type brings up the Video Format dialog box. For Video Format settings, please refer to later section.
- **Color**: Drag the slide bars to adjust the brightness, contrast, saturation and hue of the displayed video.

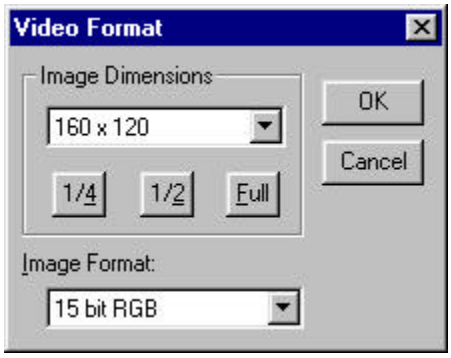
Selecting Overlay / Preview Mode

Select *Overlay* or *Preview* mode from the *Options* menu. In Overlay mode, video is transferred directly from the capture card to the memory of the display card without using any CPU resources. This results in better on-screen viewing. However, the capturing operation automatically uses the Preview mode, therefore, the quality of the captured image or video is the same regardless of the setting.



Setting the Video Display Size and Format

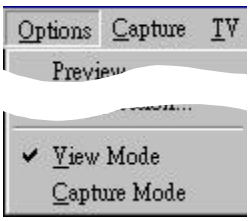
From the *Options* menu, choose *Video Format*. The Video Format dialog box appears:



- **Image Dimension**: Selects the image display size. Options are 160 x 120 pixels (1/4), 320 x 240 pixels (1/2), and 640 x 480 pixels (Full).
- **Image Format**: Select the image type and the amount of colors it will contain.

Note: The higher the number of colors and the bigger the window size, the larger the size of the AVI file. It is recommended that you keep the image size at the default and colors not higher than 16 bits.

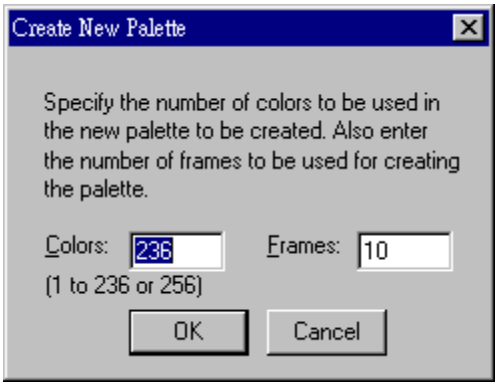
Selecting View/Capture Mode



To display video only, select the *View Mode* from the O*ptions* menu. In this mode, you can display video full screen or in a scalable window, but capture is not allowed. In the *Capture Mode*, you can only display the video in the size you specify in the **Video Format** dialog box described above.

Creating New Palette

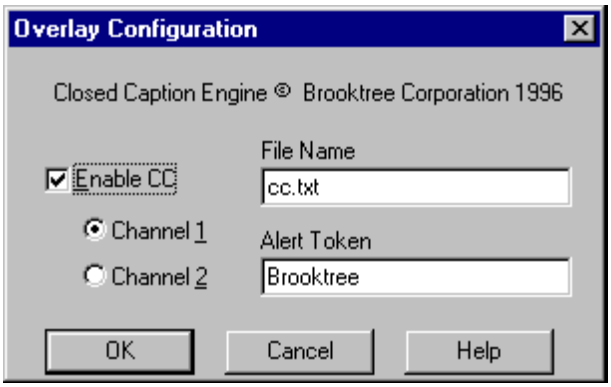
If the image type of the displayed video is 256 colors (8-bit color) or less, setting a new color palette may improve the picture dramatically.
From the *Options* menu, choose *Make Palette* to create a new palette. The following dialog box appears:



- **Colors**: Specify the number of colors to be contained in the palette.
- **Frame**: Specify how many frames from which the color is to be selected for the palette.

Displaying Close Captioned Text

If you are watching TV in NTSC standard or playing an NTSC videotape containing closed captioned material, you can enable the close captioned text to be displayed with the video. Choose *Video Display* from the *Options* menu. The following dialog box appears:



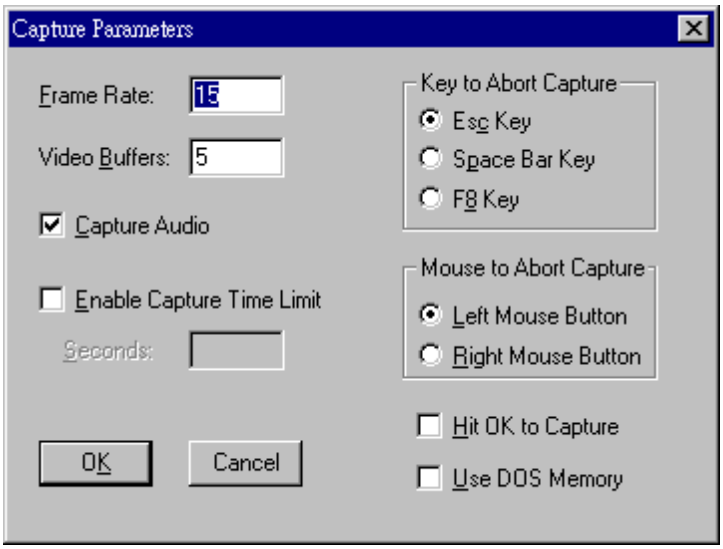
- **Enable CC**: Check this box to display the close captioned text. The text overlays the video as in standard TV. Select Channel 1 or Channel 2 for the source of the close captioned text.
- **File Name**: Specify the text file name for the transcribed closed captioned text.
- **Alert Token**: Type in this field the word that the program will detect for transcribing automatically.

■ Video Capture

Note: *Make sure that you have selected the* ***Capture Mode*** *under the* ***Options*** *menu. Please refer to page 20.*

Changing the Settings for Video Capture

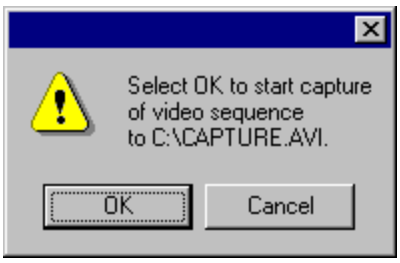
Choose *Capture Settings* from the *Capture* menu to change the preferences for video capturing. The dialog box appears:



** All the values will return to default after exiting the program.*

- **Frame Rate**: Number of still video frames that can be captured and converted to digital format in one second. A lower frame rate will produce less fluid motion, but will result in a smaller AVI file.
- **Video Buffers**: If the memory capacity allowed, more buffers will result in higher video transfer rate. It is recommended that you leave it at the default value.
- **Enable Capture Time Limit**: Check this box to specify the maximum recording time.
- **Capture Audio**: Check this box to capture audio with the video.
- **Key to Abort Capture**: Select the key to be used for ending video capture.

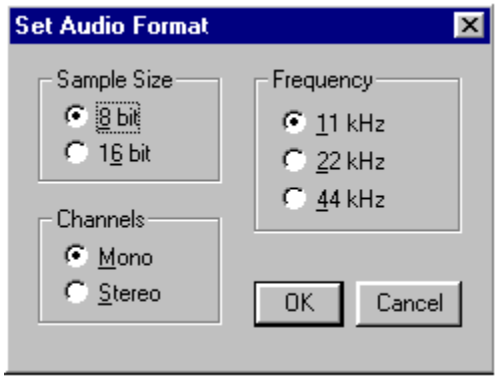
- **Mouse to Abort Capture**: Select the mouse button to be used for ending video capture.
- **Hit OK to Capture**: By default the capturing begin as soon as you choose the capture command from the Capture menu. Click this check box to have a dialog box appear before the capturing start for re-confirmation.



- **Use DOS Memory**: With this option enabled, the program will try to use the DOS memory for faster performance. However, the memory capacity is limited to under 1 Megabyte.

Selecting the Audio Format

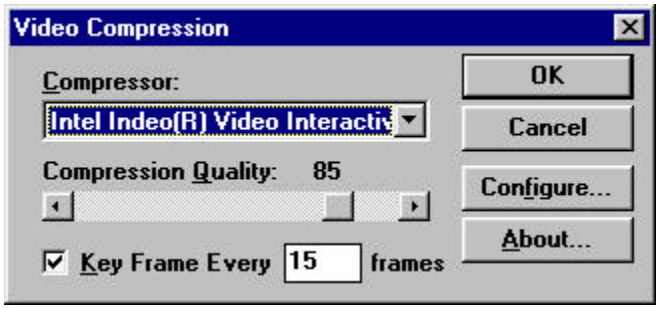
With the Capture Audio option enabled (See the previous section), the *Audio Format* command from the *Options* menu allows you to specify the format of sound you will record with your video. The following dialog box will appear:



Enhancements like Stereo Sound will result in less bandwidth being used for Video Recording. Therefore, unless sound is important, keep the settings low or capture only the video.

Selecting the Video Compressor

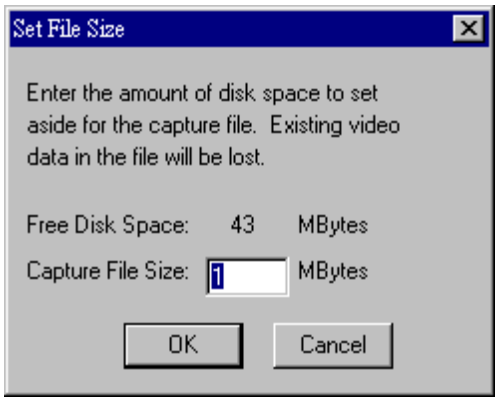
From the *Options* menu, choose *Compression* to select the video compression algorithm. The dialog box appears:



- **Compressor**: Selects the compressor to be used.
- **Compression Quality**: Sets the compression rate. The higher number will result in less distortion but bigger AVI file.
- **Key Frame**: The bigger the interval between the key frames, the more the distortion will be.
- **Configure**: Configures the settings for the selected compressor.

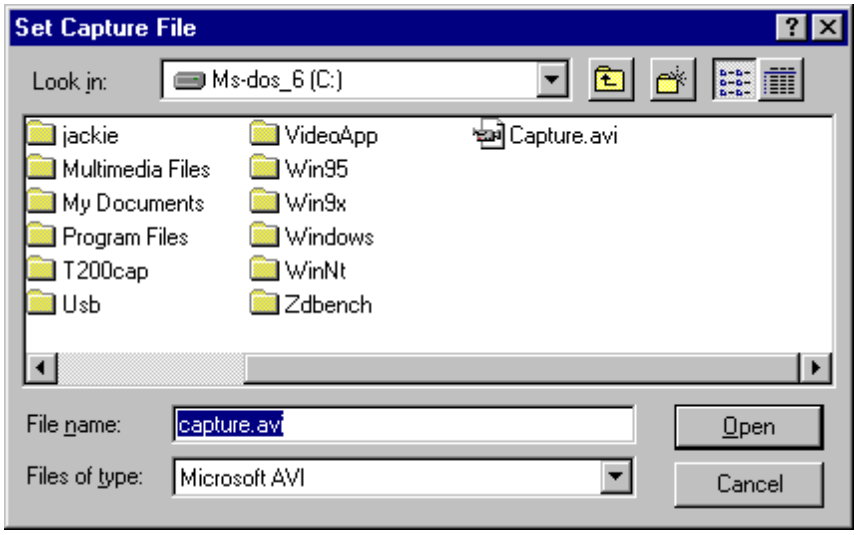
Allocating Memory Space

Digital video takes up a large amount of hard disk space. Before you start to capture a movie, check out the available hard disk space and set aside a memory size for the captured file by selecting *Allocate File Space* from the *File* menu.



Specifying the File Name for Motion Video Capture

Before capturing a motion video, you should first decide the name of the captured file and the location on the hard drive that the image will be stored in, or the file will be saved to the default name and path `c:\capture.avi`
Choose *Set Capture File* from the *File* menu. The following dialog box appears:



Capturing Motion Video

Click *Capture Video* under the *Capture* menu to initiate video capture. After the movie is saved to disk, you will be shown the amount and percentage of dropped frames. After the capturing is complete, the video display will remain still. Click *Preview* or *Overlay* from the *Options* menu to resume the playing.

Capturing a Still Image

Click *Capture Frame* from the *Capture* menu to freeze the motion video. Then click *Save As DIB File* from the *File* menu to capture the current frame. The captured image is saved to the hard disk with the default path and filename: `c:\tekcap.dib`.

To resume playing the video, press the Esc key on your keyboard.

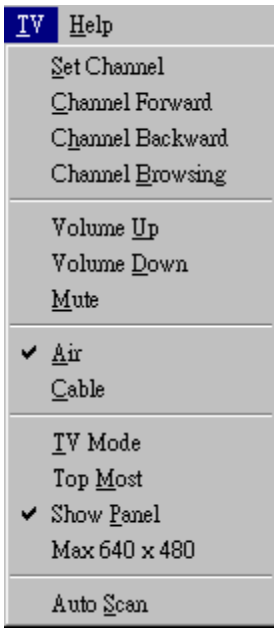
Copying to the Clipboard

To copy the displayed image onto the Clipboard, choose *Copy* from the *Edit* menu. The image is captured as a bitmap and can be pasted to any application supporting the Windows software Clipboard.

■ The TV Tuner

Show / Hide Control Panel

From the *TV* menu, check *Show Panel* to display/hide the control panel (See page 17). All the options described below are also available on the control panel.



Selecting Antenna / Cable Input

From the *TV* menu, click on *Air* or *Cable* to select antenna (air) or cable input.

Auto Scanning for TV Channels

When you click on *Auto Scan*, the TV Tuner scans for all active channels and stores them to a list.

Selecting a Channel

You can directly select a channel by clicking on *Set Channel*, the following dialog box appears:

Key in the desired channel number and click OK.
For channel up/down, click on *Channel Forward* / *Channel Backward*.

Adjusting the Volume

Click on *Volume Up* / *Volume Down* to adjust the volume. To temporarily stop playing the sound, click *Mute*. Click *Mute* again to resume playing the sound.

Viewing in a Window/Full Screen

To watch TV in a full screen, click on *TV Mode*, press the Esc key to return to Windows.

Note: M205 supports full screen viewing up to 1024×768×16bit color VGA setting, however, some problem may occur with certain VGA cards. If you find the image centered to the left of the screen and has image residue when refreshing, check the option *Max 640´480* to solve the problem.

On Top

Enable/disable the M205 application window to be always on the top layer.

Channel Browsing

To view all channels simultaneously, click Channel Browsing. The option is then toggled to *Exit Browsing*. To stop browsing, click *Exit Browsing* or press the Esc key on you keyboard.

You may select the channel while browsing by clicking on the desired channel.

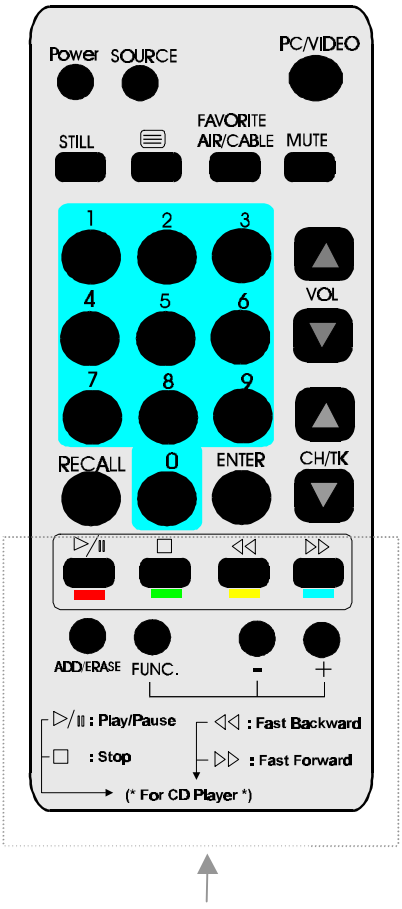
5 THE REMOTE CONTROL

■ Using the Remote Control

Included with your *CaptureTV* package is an infrared remote control. To use the remote, you must first hook up the IR Sensor, as shown on Chapter 2. You must aim the remote at the IR Sensor during use, so it's recommended that you place the sensor near your monitor.

Following is a summary of the Remote Control's major function buttons:

- **POWER**:
  Quits the *VideoCapture* software.
- **SOURCE**:
  Switches between TV, S-video and composite video sources.
- **PC/VIDEO**:
  Switches between full screen and window.
- **STILL**:
  Freezes the video.
- :
  Activates / Stops Channel Browsing.
- **AIR / CABLE**:
  Switches between cable TV and antenna (Air).
- **MUTE**:
  Stops / Resumes playing the sound.
- **VOL**:
  Volume up/down
- **CH/TK:**
  Channel up/down
- **RECALL**:
  Changes to the previously selected channel.



* Reserved for future function expansion.

6 TROUBLESHOOTING

The following troubleshooting tips may help you if you experience problems. Contact your dealer for more advanced troubleshooting information.

Basic Troubleshooting Tips

- Check that the card is seated properly in its expansion slot. If the problem still exists, try a different PCI expansion slot.
- Ensure the monitor cable is securely fastened to the card.
- Make sure that the monitor and computer are plugged in and receiving power.
- Disable any built-in graphics capabilities on your mainboard. For more information, see your computer documentation.
- Make sure that you selected the appropriate monitor when you install your VGA enhanced driver.
- Because a typical computer system consists of many different parts, difficulties may arise from a combination of items. Check the following list and find a symptom that's similar, then try the suggested solution.

Video is unstable

- Check that you're using the correct broadcast standard format (NTSC, PAL, or SECAM).
- Check the quality of your incoming TV signal on another receiver; bad reception may be the cause.

Video is in black and white only

- Check the connectors setting to make sure you've selected the correct input (CATV, Composite, or S-Video) for your video source device.

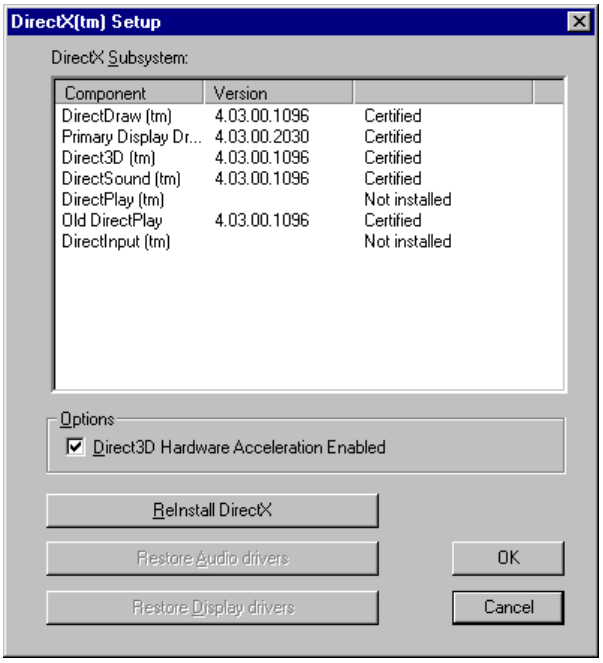
No video or audio

- Check that the audio and video connectors are securely plugged into the correct jacks.
- Check that the Tekram Video Player card is securely seated in its slot.
- Check that the VGA enhanced driver is installed.
- Check the audio cables to make sure all connectors are securely plugged into the correct jacks.
- Ensure that another Windows audio program is not muting the sound.
- Check the mixer line input selling in the audio software provided with your sound card.

■ ■ ■ APPENDIX

■ DirectX 5 Installation for Microsoft Windows 95

1. Ensure that Windows 95 is up and running properly.
2. Insert the *Tekram Multimedia Drivers & Utilities* CD-ROM into your CD-ROM drive.
3. Under Start… Run of the task bar, TYPE in X:\DIRECTX5\DIRECTX\DXSETUP (X is the letter of your CD-ROM drive). The following dialog box will appear:



4. Check “Direct 3D Hardware Acceleration Enabled” option and then click the “ReInstall DirectX” button.
5. Restart Windows 95 to complete installation.